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PARTICIPATIVE DECISION MAKING AS A METHOD OF REDUCING CONFLICT IN DEFENSE INDUSTRY RESEARCH AND DEVELOPMENT

DEFENSE SYSTEMS MANAGEMENT SCHOOL,
FORT BELVOIR, VIRGINIA

MAY 1976

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PROGRAM MANAGEMENT COURSE
INDIVIDUAL STUDY PROGRAM

PARTICIPATIVE DECISION MAKING AS
A METHOD OF REDUCING CONFLICT
IN DEFENSE INDUSTRY R&D

STUDY PROJECT REPORT
PMC 76-1

William L. Keeling
General Dynamics Corp.

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DEFENSE SYSTEMS MANAGEMENT SCHOOL

STUDY TITLE: PARTICIPATIVE DECISION MAKING AS A METHOD OF REDUCING CONFLICT IN DEFENSE INDUSTRY R&D

STUDY PROJECT GOALS:

To determine methods of motivating project and functional personnel in a matrix form of organization.

STUDY REPORT ABSTRACT:

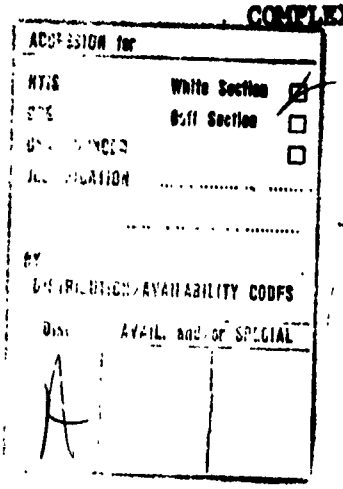
The purpose of the project was to investigate the potential application of participative decision making as a means of reducing conflict. Emphasis was placed on a matrix form of program management organization in defense industry research and development. A literature survey of conflict and participative decision making was conducted and the results are summarized in the report. Nine industry program managers were also interviewed regarding these subjects.

Conflict between program managers and functional personnel was found to be significant and some primary sources of this conflict included schedules and priorities. Participative decision making (PDM) may be used as a method for reducing this conflict and one structure for implementing PDM is suggested in the report. It was felt that a very important portion of the PDM process was when to use it or what situational variables should be considered. Vroom's contingency model considers these important variables and this model is recommended for use ~~in conjunction with the PDM process. The model is summarized in the report.~~

KEY WORDS MANAGEMENT CONCEPTS PARTICIPATIVE MANAGEMENT MILITARY-INDUSTRIAL COMPLEX MOTIVATION

R&D CONTRACTS

KEY WORDS: Conflict, Decision Making



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PARTICIPATIVE DECISION MAKING AS A METHOD OF REDUCING CONFLICT IN DEFENSE INDUSTRY R&D

Study Project Report

Individual Study Program

Defense Systems Management School

Program Management Course

Class 76-1

by

William L. Keeling

General Dynamics Corp.

May 1976

Study Project Advisor
MAJ D.S. Fujii, USAF

This study project report represents the views, conclusions and recommendations of the author and does not necessarily reflect the official opinion of the Defense Systems Management School or the Department of Defense.

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EXECUTIVE SUMMARY

The purpose of this project is to investigate the potential application of participative decision making (PDM) as a means of reducing conflict in defense industry research and development. Emphasis is placed on a matrix form of program management organization where the primary task accomplishment is done by personnel in functional areas. A literature survey of conflict and PDM (a process of joint decision making in which the decisions have future effects on those making them) was conducted and the results are summarized. Also, nine industry program managers were interviewed regarding the subjects of conflict and decision making.

Conflict between program managers and functional personnel is found to be quite significant and some primary sources of this conflict are schedules and priorities. Participative decision making may be used as a method for reducing this conflict and one structure for implementing PDM is suggested. It must be pointed out that PDM is not a "cure all" and should not be blindly used at all times. A very important portion of the PDM process is when to use it or what situational variables should be considered. Vroom's contingency model considers these important variables and this model is recommended for use in conjunction with the PDM process.

ACKNOWLEDGEMENT

Thanks to Don Fujii for his help in organizing the project and providing valuable reference information.

TABLE OF CONTENTS

Section 1.

INTRODUCTION

In any organizational structure, conflict among and between people will inevitably occur. The causes of the conflict may be many and varied; likewise, there are varied modes of conflict resolution. Some forms of organizational structure are particularly prone to conflict introduction and this paper will focus on one of these forms - the program or project management concept. We will concern ourselves with the "lean" or "medium" matrix type of organization wherein a single program manager (PM) has the authority and responsibility to accomplish the project, the PM has a program office staff to assist, but the primary task accomplishment is done by personnel in the various functional areas. Emphasis will be placed on research and development (R&D) activities in the defense industry.

The primary purpose of this project is to investigate participative decision making as a possible method of reducing conflict. The early sections of the paper are dedicated to general discussions of conflict and participative decision making. These are followed by discussions of the results of interviews with nine program managers in various defense industries. Interview topics include conflict sources, conflict resolution methods and decision making. The next section deals w.th participative decision making as a means of reducing conflict. Some of the benefits are pointed out and, perhaps more important, some of the situational variables which should influence the decision making style are discussed. The last section suggests an organizational scheme which may facilitate participative decision making in defense industry R&D.

Section 2.

CONFLICT

Conflict may be defined (1)[1] as the behavior of an individual, a group, or an organization which impedes or restricts (at least temporarily) another party from attaining its desired goals. Although conflict may impede the attainment of one's goals, the consequences may be beneficial if they produce new information which enhances the decision making process. By contrast, conflict becomes dysfunctional if it results in poor project decision making, lengthy delays over issues which do not importantly affect the outcome of the project, or a disintegration of the teams effort (1). For purposes of this paper, we are primarily interested in this harmful conflict, i.e., we're interested in exploring methods of reducing the type of conflict which is not beneficial to the organization.

In order to provide some background into the general area of conflict, the results of a study by Thamhain and Wilemon (2) will be briefly summarized. This study investigated several important areas in the management of conflict in project-oriented work environments, e.g. the cause and intensity of conflict experienced by project managers (PM), different modes of conflict resolution (and their effectiveness) and the influence modes of project managers which minimize conflict with key interfaces. The empirical investigation was based upon a survey of project managers in approximately 150 technology-oriented companies, which resulted in a usable sample of 100 project managers. The sample covered a wide variety of project management

[1]This notation will be used throughout the report to designate references. The references are listed by number in Section 7 of the report.

situations such as airplane production, computer installation, facilities construction and research and development. The data were collected with a survey questionnaire which was supplemented by interviews with project managers in various organizational settings.

The intensity and cause of conflict experienced by project managers was measured using a grid with seven causes of conflict versus five interface components. The interface components represent areas where conflicts occur with:

- Subordinates
- Assigned project personnel
- Functional support departments
- Superiors
- Among team members

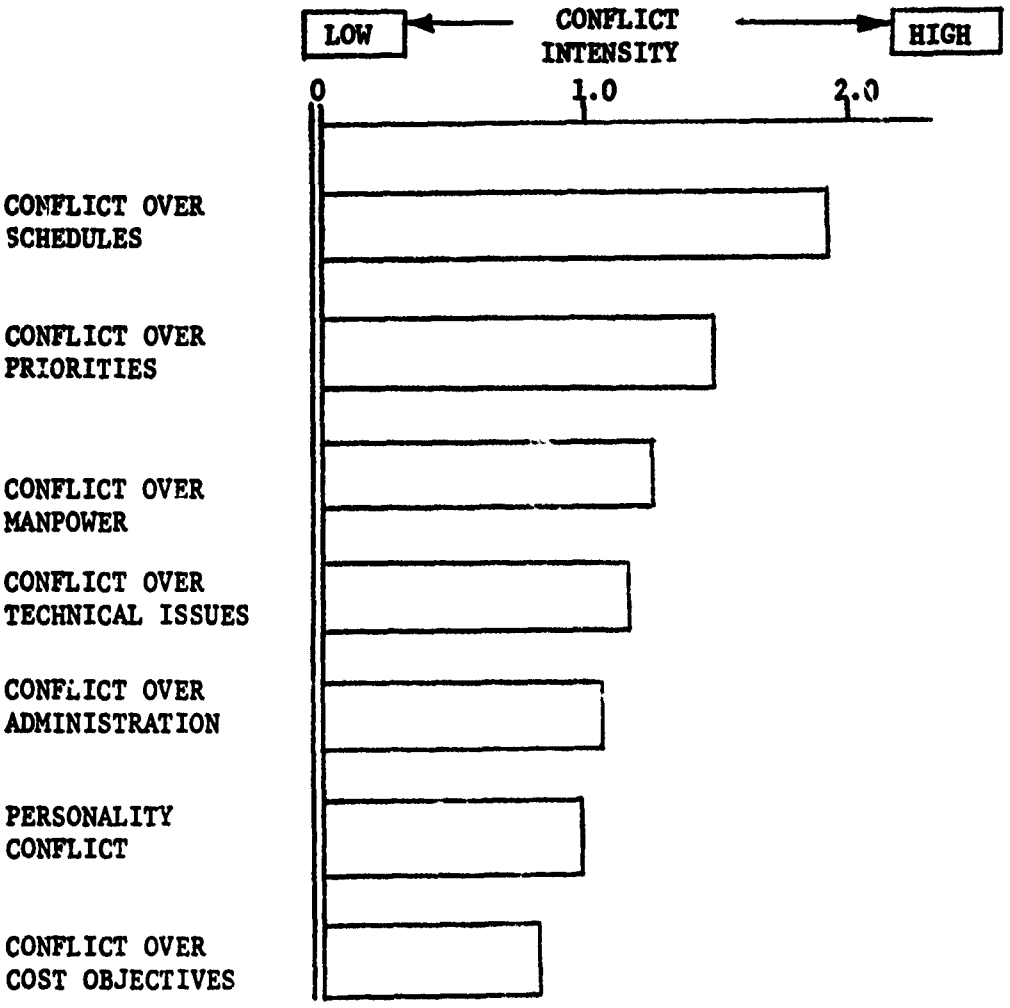
Project managers were asked to indicate on a four-point scale (0, 1, 2 or 3) the intensity of conflict they experienced for each of the seven causes with each of the five components. The actual measurements and responses are summarized in Figure 2.1.

As illustrated, conflict over schedules seemed to be the major problem, followed by conflict over project priorities and manpower resources. However, considerable conflict seemed to exist in the other areas, too. One important item which is not illustrated by Figure 2.1 is the ranking of the interface components where conflicts occur. The interface components were found to have the following ranking of conflict intensity, from <u>most intense</u> to <u>weakest</u>:

1) Dealings with functional departments
2) Conflict with assigned personnel
3) Conflict between team members

Figure 2.1

Mean Conflict Intensity Profile Over Project Life Cycle



4) Conflict with superiors

5) Dealings with subordinates

Thamhain and Wilemon found that a high source of conflict existed with functional departments supporting the project. They explained much of this conflict in terms of the authority/priority mix which exists in many project-oriented work situations. Program managers often don't have the authority to direct or to establish the priorities of functional support areas. This can lead to conflict over the timing of program activities which in turn can affect all causes of conflict. Conflict with functional departments also may arise over differing opinions regarding technical issues. The expertise of a functional support group may not coincide with a program managers views on a particular technical issue.

Conflict with assigned project personnel ranked second to the functional support departments in almost all cases. These assigned personnel normally came from the functional departments. Thus the conflict may be somewhat similar to that with the functional departments; however, there are indications that most project managers have a greater degree of authority and control over assigned personnel. Even considering this control, assigned personnel often bring to the project the parochial viewpoint of their own functional departments.

At the weak end of the conflict intensity scale it was found that conflict with subordinates ranked lowest in most cases. This was probably because program managers have more control over their immediate team members, and team members are more likely to share common project objectives with the program manager than functional departments.

Thamhain and Wilemon (2) also investigated some of the modes of conflict resolution and the use of these modes by program managers. They considered the following five methods as identified by Blake and Mouton (3):

WITHDRAWAL - Retreating from an actual or potential disagreement.

SMOOTHING - Deemphasizing or avoiding areas of differences and emphasizing areas of agreement.

COMPROMISE - Bargaining and searching for solutions which bring some degree of satisfaction to the parties in dispute; characterized by a "Give and Take" attitude.

CONFRONTATION - Facing the conflict directly; involves a problem solving approach in which the affected parties work through their disagreement.

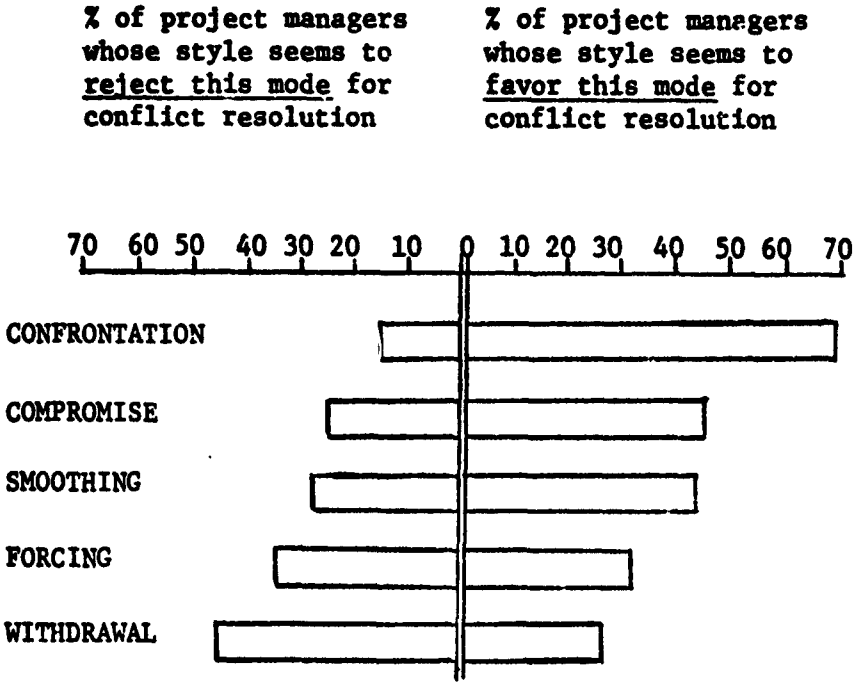
FORCING - Exerting one's viewpoint at the potential expense of another; often characterized by competitiveness and a win/lose situation.

By the use of various sets of aphorisms to describe methods of resolving conflict, the program managers were surveyed to determine relative strengths for each of the corresponding modes of conflict resolution. This survey measured the degree to which the project managers adopted a particular mode of conflict resolution in specific personal interface situations between them and their project personnel, their superiors and their supporting functional departments. A summary profile of the five modes of conflict resolution is shown in Figure 2.2.

It should be kept in mind that the information shown in Figure 2.2 are "average" or summary data. The information says nothing about which personnel or groups are involved or the time factors involved (e.g. how much time is available for making the decision which is causing the conflict). In other

Figure 2.2

The Most and Least Important Modes of Conflict Resolution



The various modes of conflict resolution actually used to manage conflict in project oriented work environments.

words, the situation or situational variables are not included. It is this authors opinion that these variables are extremely important in selecting a method of conflict resolution, solution finding or decision making.

Thamhain and Wilemon (2) considered one situational variable in the conflict resolution investigation; that of the personnel or groups involved. They did a correlation analysis regarding the intensity of conflict as perceived by project managers and their actual style of conflict resolution with various people. The results are shown in Figure 2.3. With regard to conflict between PM's and the functional departments that support them, the detrimental effect of forcing was most noticeable. Also, conflict with the functional departments seemed to increase the more the program managers relied on confrontation, while withdrawal tended to minimize conflicts. This is quite interesting since confrontation is generally "good" (given adequate time) and withdrawal is generally ineffective and accomplishes little. This might imply that always using techniques which reduce conflict doesn't necessarily result in the most effective method of "getting the job done".

Thamhain and Wilemon also looked at the influence methods used by program managers to gain support from project personnel. Nine influence factors were considered: expertise, authority, work challenge, friendship, future work assignments, promotion, fund allocation, salary, and penalty. The factors which were statistically significant with regard to conflict intensity are shown on Figure 2.4. Note that authority (which was perceived by many PM's as very important in gaining project support) was found to have negative effects on conflict management.

In summary, conflict may not always be detrimental; however, a manager would normally try to reduce unproductive conflict as much as possible. The managers actions regarding conflict resolution or prevention should certainly

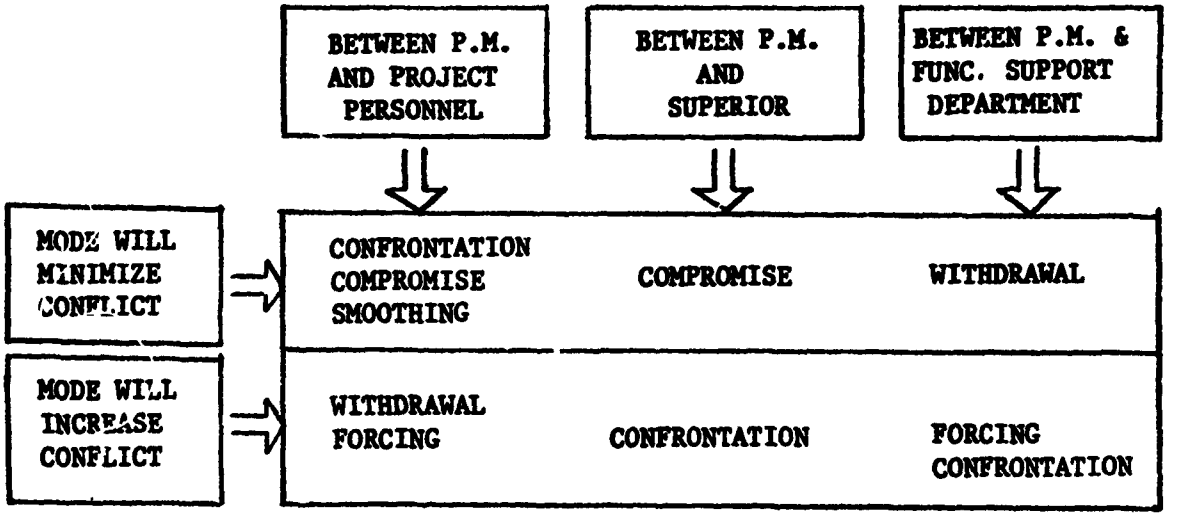


Figure 2.3

CONFLICT RESOLUTION MODES AND INTENSITY OF CONFLICT

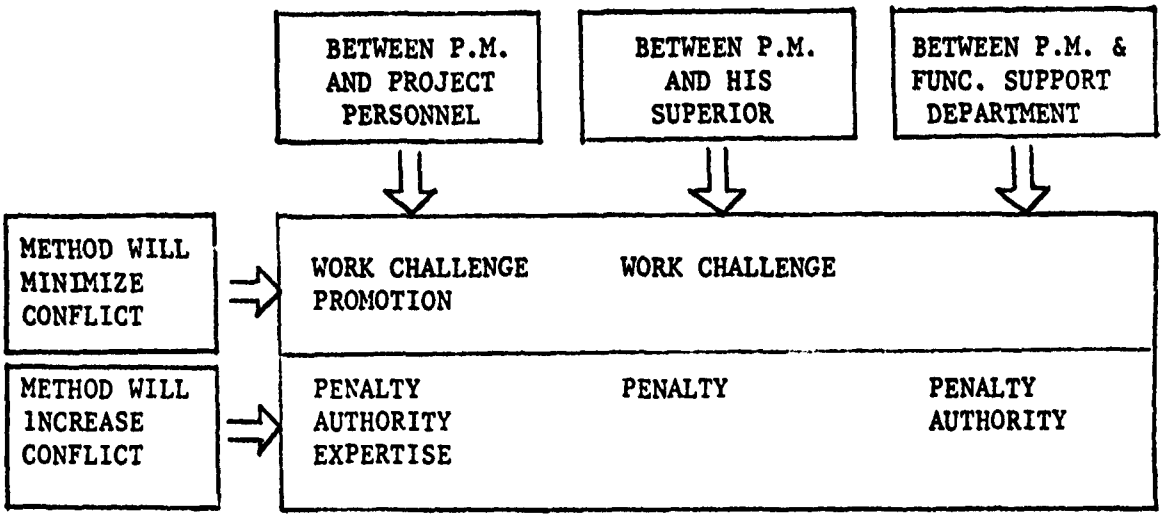


Figure 2.4

P.M. INFLUENCE METHODS AND INTENSITY OF CONFLICT

be based on the situation and the overall objectives of the program. Schedules and priorities appear to be prime sources of conflict in project oriented organizations. Conflict with functional departments is a major concern for many program managers and the highest conflict intensity seems to occur with the functional support departments. This conflict may be induced or increased by the PM who overly relies on penalties and authority. In any event, it is important that key decisions which affect the project be communicated to all project-related personnel. By openly communicating the objectives and necessary subtasks, there's higher potential for minimizing detrimental, unproductive conflict.

Section 3.

PARTICIPATIVE DECISION MAKING

One definition of participative decision making (PDM) is that PDM is a mode of organizational operations in which decisions as to activities are arrived at by the very persons who are to execute those decisions (4). PDM is contrasted with the conventional hierarchical mode of operations in which decision and action functions are segregated in the authority structure. Another definition (5) is that PDM is a process of joint decision making by two or more parties in which the decisions have future effects on those making them. The amount of participation by any individual is the amount of influence he or she has on the decisions and plans agreed upon.

Either of these broad definitions is adequate for purposes of this paper. The important point is that participation in this sense is not "consultative supervision" where a manager, who has already decided upon a course of action, asks the opinion of subordinates merely to give them a sense of participation. PDM implies that the supervisor really wants the opinion of the employees and that he is willing to be influenced by these opinions. Another important point to be considered with PDM is the relative importance of the decision being evolved. Behavioral scientists insist that the degree of influence employees have on their superior's decision, and the corresponding influence that decision will have on the work force, is related to the impact of the decision in terms of matters that really affect the job, as contrasted with company recreational activities, for example (6).

Why the interest in participative decision making? In general, research has shown repeatedly that people are more deeply committed to a course of action if they have a voice in planning it. This commitment results in increased motivation and improved job performance. In industry there has been

a growing realization that one of the most effective means of gaining commitment and involvement is to obtain the participation of the work force in reaching decisions and plans of action that affect them. The use of participation as a management tool is one of the cardinal principles of the contemporary behavioral science movement (6).

There are many examples in the literature of successful experiments and cases where PDM resulted in significant improvements in work output and worker job satisfaction (e.g. 4, 5, 7, 8, 9). In addition, many references on management techniques mention the potential benefits of participation methods while not mentioning PDM by name. For example, Gaddis in his article on advanced technology project managers (10) states that in learning to manage a group of professional employees, the usual boss-subordinate relationship must be modified. Of special importance, the how-the details or methods of work performance by a professional employee-should be established by the employee. It follows that he must be given the facts necessary to permit him to develop a rational understanding of the why of tasks assigned to him. Gaddis also states that budgets and schedules must not be mere edicts, but should be carefully prepared with the cognizance of and with the aid of the technologists who must live by them.

Another example is Katz's article (11) where he suggests that the manager should try to keep the flow of ideas, suggestions, and directions from becoming unilateral. The manager should continually work at reducing the dependency feelings of subordinates and encourage planning by all members. He should also leave wide limits within which each individual can exercise judgment and can make additional contributions.

Participation also plays a large part in Hackman's popular Job Enrichment Model (12). For example, one of his core job dimensions is increased responsibility or autonomy, the degree to which the job gives the worker freedom,

independence, and discretion in scheduling work and determining how he will carry it out. People in highly autonomous jobs know that they are personally responsible for successes and failures. How the work goes will be felt to depend on the individuals own efforts and initiatives rather on detailed orders from the superior. One of Hackman's job-design principles (or implementing concepts) is called vertical loading. When a job is vertically loaded, responsibilities and controls that formerly were reserved for higher levels of management are added to the job. Some methods of accomplishing this are to grant the job holder involvement in setting schedules and work methods, grant additional authority, allow worker more influence in time management and priorities, and grant some measures of financial control. Once again, the idea of participation or PDM is certainly evident.

With all this evidence that participation methods are highly effective, should they be applied indiscriminately in all cases? The answer to this question is of course negative. This will also be discussed in the next section of this paper but a few comments are in order here. First of all, situational variables such as the time factor must be considered. Usually, the more participation is involved in a decision, the more time it takes. Sometimes this luxury of time is simply not available.

Another variable is the type of people involved. It's been said that a significant percentage of workers just aren't interested and could care less about being involved in decision making or plotting their own course of action. They just want to be told what to do and then do it. There are studies which support this idea. For example, the primary purpose of one of Vroom's studies (5) was to determine the effects of participation in decision-making on persons with different personality characteristics. The findings corroborated previous evidence that participation generally had positive effects on both attitudes

and job performance. However, it was found that the magnitude of the effects was a function of certain personality characteristics of the participant. Authoritarians (characterized by unquestioning obedience to authority rather than freedom of judgement and action) and persons with weak independence needs were apparently unaffected by the opportunity to participate in making decisions. On the other hand, equalitarians (characterized by the belief that all individuals should have equal rights) and those who have strong independence needs developed more positive attitudes toward their jobs and performance increased with participation.

Leavitt (13) raises some interesting questions regarding participation. For instance, even if we grant that people carry out solutions to business problems more eagerly when they have participated in the decision, does this mean that the solution is <u>better</u>? His article mentioned that research had proven the positive relationship between participation and willingness; however, research had not necessarily proven that participative solutions were better than solutions arrived at by a separate group of expert planners. He recommended that participative beliefs, which have great practical utility, be fit into the larger organizational picture involving the processes of thinking, organizing, and problem solving. He suggested that modern organizations call for many different kinds of managerial practices.

In summary, participative decision making can provide significant benefits; however, it is not a "cure all" and should be employed only after careful analysis of all situational variables.

Section 4.

RESULTS OF PROGRAM MANAGER INTERVIEWS

In order to obtain a feel for the current climate in defense industry R&D regarding conflict and decision making, a series of structured telephone or personal interviews were conducted. Nine program managers were interviewed. Companies represented were Aeronutronic Ford (Newport Beach, Ca.), Fairchild Republic (Farmingdale, N.Y.), General Dynamics (Pomona, Ca. and San Diego, Ca.), and Grumman (Bethpage, N.Y.). Seven of the programs utilized the "lean" or "medium" matrix type of organization while two of the programs had rather large or "self sufficient" program office structure. Eight of the programs were in R&D while one was in production.

With this small of a sample, it would probably be somewhat meaningless to perform a statistical analysis of the results. However, I think a listing of the questions which were asked along with a general discussion of the results would be beneficial. The questions, in no particular order, are listed below. Each question is followed by a short discussion of the responses.

1) To what extent do you involve your immediate subordinates in the program office (P.O.) in your decision making process (assuming adequate time)?

Summary of Responses: Most responses were in the medium to medium-high categories. One response was low.

2) To what extent do you involve your functional supervision in your decision making process (assuming adequate time)?

Summary of Responses: Most responses were in the medium category.

3) To what extent do you involve the rank and file functional workers in your decision making process (assuming adequate time)?

Summary of Responses: Most responses were in the low to medium categories.

4) Rank the following areas of potential conflict with subordinates in P.O., with functional supervision, and with rank and file functional worker: technical issues, manpower, schedule, personality, cost, priorities.

Summary of Responses: With subordinates in the P.O., schedule, priorities, and cost ranked high in conflict; personality and technical issues relatively low. With functional supervision, priorities, schedule, and manpower ranked high; personality low. With rank and file functional workers, schedule and technical issues ranked high in conflict; personality and cost low.

5) To what extent do you delegate authority to your assistant PM's or subordinates in the program office?

Summary of Responses: Most responses were in the medium to high categories.

6) Which of the following methods of conflict resolution do you use most frequently with subordinates in P.O., with functional supervision, and with rank and file functional workers: withdrawal, smoothing, compromise, confrontation, forcing (see Section 2 for definitions).

Summary of Responses: Confrontation and forcing were often used with subordinates and rank and file functional workers. Several times it was mentioned that forcing was used when confrontation failed. With functional supervision, confrontation was used most often; however, compromise, forcing, and smoothing were frequently mentioned - some PM's mentioned that it depends on the situation.

7) Do you feel that your organization provides an adequate and effective "training ground" for assistant program managers and program managers?

Summary of Responses: The responses were about equally divided between yes and no.

Several comments may be in order regarding the interviews. For instance, note that the extent to which the PM's involved others in their decision making decreased as the parties became farther removed from the program or as the

authority of the parties decreased. Also, note the correlation between the sources of conflict (question 4) and the data of Section 2, Figure 2.1. It's also interesting to note that withdrawal was not mentioned at all as a potential method of conflict resolution (question 6). Evidently there are very few, including the author, that feel this method accomplishes anything toward accomplishing program objectives.

Section 5.

PDM AS A MEANS OF REDUCING CONFLICT

Can participative decision making be used as a method of reducing conflict in defense industry research and development programs? Based on the literature survey and interviews with program managers in the defense industry, the answer to this question would certainly seem to be yes. Not that PDM should be applied blindly in all cases - more will be said regarding this later in this section - but in many cases PDM may result in a more efficient and effective accomplishment of program objectives.

It's been stated that schedules and priorities are a prime source of conflict in project oriented endeavors. It's also been mentioned that the highest conflict intensity seems to occur with the functional support depa. ments. This is extremely important in a "lean" or "medium" matrix organization where the primary task accomplishment is done by personnel in the various functional areas. It seems logical that the more the functional personnel could participate in the establishment of schedules, priorities, etc., the more they would be committed to the decisions and the more eager they would be to carry out the solutions to the problems.

Consider also the personnel which are normally involved in defense industry R&D. A large percentage are engineers, scientists and technicians. A review of some of the literature on the motivation of these types of workers (e.g. 10, 14, 15) indicates that some of the key motivational factors are achievement, meaningfulness of the work itself, and responsibility. That is, the motivational needs consist primarily of growth, achievement, responsibility, and recognition. These are normally the type of people that respond to PDM techniques with positive results. Along these same lines, Ritti (15) indicates that a serious

problem exists for engineers in the form of job dissatisfaction which can be linked to underutilization and misutilization of skills. He also says that research indicates that over-management and inflexible personnel policies are at fault and that a climate of over-control is the source of underutilization.

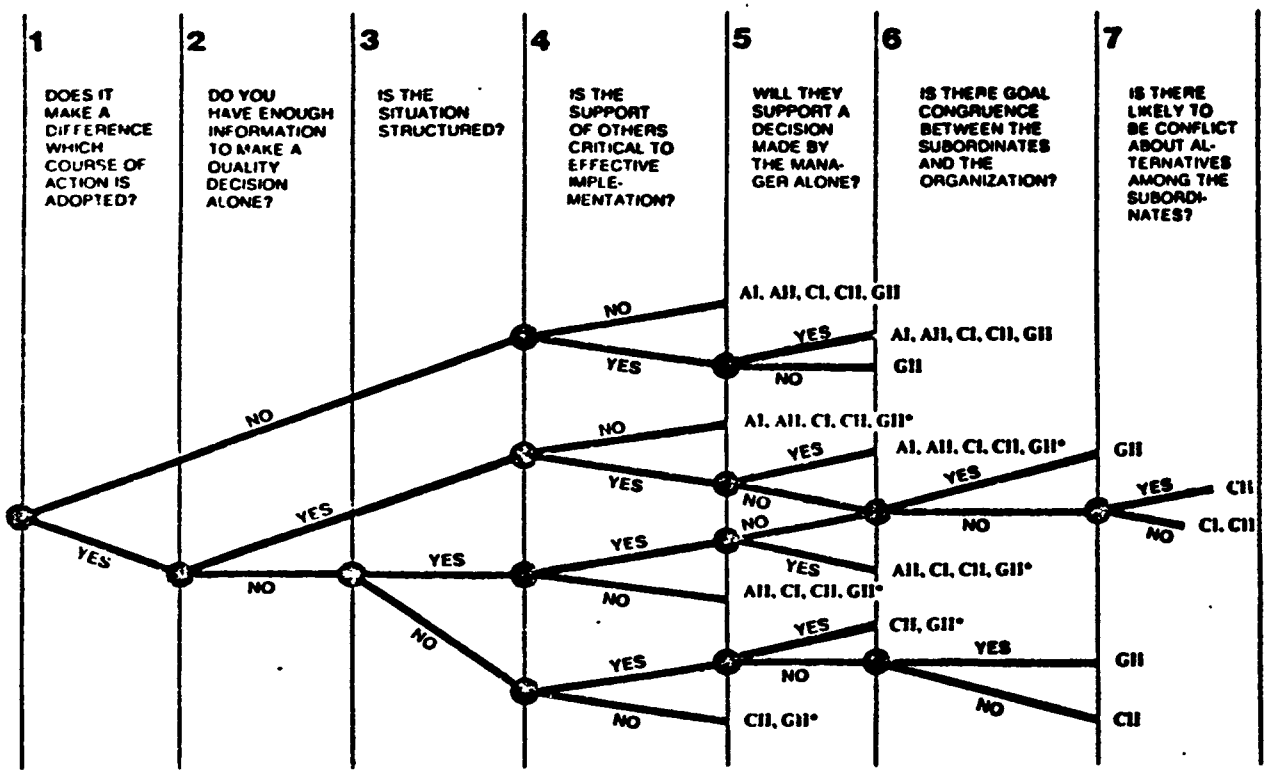
Now that some of the benefits of participative decision making have been summarized, let's take a look at when the PDM technique should be used, i.e. how the situational variables influence decision making styles. Vroom's contingency model (17, 18) will be used for this purpose. Vroom feels that leader behavior is determined by two classes of variables, attributes of the leader and attributes of the situation encountered. In other words, there is no form of leader behavior that is optimal for all situations, the nature of the situation must be considered.

Vroom's model deals primarily with one facet of leadership behavior - the extent to which the leader shares his decision making power with his subordinates. Figure 5.1 shows one version of the model (18) for group problems, i.e. problems that affect a substantial portion of the subordinates. At the top of the figure are the situational variables that should influence the decision process used by the leader-specifically, the amount of opportunity that the leader gives his/her subordinates to participate in the making of a decision. To use the model, one starts at the left-hand side of the diagram and asks each question pertaining to the situational variable which is encountered. One follows the path developed and finally determines the decision processes (AI, AII, etc.) that are deemed appropriate to the problem.

The decision processes AI and AII are variants of an autocratic process. In AI the manager solves the problem alone using whatever information is available to him/her at that time; in AII the manager obtains any necessary

Figure 5.1

DECISION PROCESS FLOWCHART



*CII within Acceptable Behaviors only when the answer to Question 6 is YES.

information of a specific nature from subordinates before making the decision himself/herself. CI and CII are variants of a consultative process. In CI the manager shares the problem with relevant subordinates individually, getting their ideas and suggestions before making the decision; CII is similar, but the consultation takes place within the context of a group meeting. Finally, GII is participative decision making or the group decision concept in which the manager's role is that of chairperson of a group meeting aimed at reaching consensus on the action to be taken.

Another way of looking at the model is suggested by Weiss (18). He states that the situational variables of Vroom's model provide us with some informal trends that are useful to bear in mind on almost every occasion when time is critical and there is some question about who should be involved in a decision. These trends are shown in Figure 5.2.

Vroom's model (17) as shown in Figure 5.1 does not include time as a situational variable. Time is; however, discussed in his article. The time required to make a decision (defined either as the elapsed time or the number of man-hours needed to make the decision) increases with the intensity of involvement or participation of others. Thus a time-efficient model would select the most autocratic alternative from the appropriate decision processes. This choice would be clearly indicated in crisis or emergency situations and in situations where one must minimize the number of man-hours that enter into making the decision.

Vroom goes on to say that time is of course not the only dimension to include in deciding the degree of participation. In addition to the possibilities that participation increases decision quality or its acceptance, there are also grounds for believing that participation contributes to individual and team development and is likely to result in more informed and responsible behavior by subordinates in the future.

Figure 5.2

A GUIDE FOR CHANGING PARTICIPATION LEVELS

IF	Participation Should	But Only IF
1. There is a high quality requirement.	Increase	Others have data needed for a high quality decision.
2. The situation is unstructured.	Increase	Others have data needed for a high quality decision.
3. There is low goal congruence.	Decrease	There is a strong quality requirement.
4. There is a high level of commitment (not merely compliance) required.	Increase	Others would not be committed to a decision made by the leader alone.
5. There is a high probability of commitment to a decision made by the leader alone.	Decrease	NO CONDITIONS
6. There is a high level of conflict.	Increase	Others would not be committed to a decision made by the leader alone.
7. There is a strong need for training or team building.	Increase	NO CONDITIONS

In summary, participative decision making seems a likely candidate for reducing conflict. However, it must be emphasized that situational variables should definitely be considered when selecting any decision making style. For example, Vroom's contingency model of situational variables may be helpful.

Section 6.

PDM IMPLEMENTATION

This section will consider one possible method of implementing participative decision making in a matrix type organization. It is only one suggestion which seems to make sense to me; no doubt there are others. The suggested structure of the organization and program office will be discussed. When to use PDM, and under what circumstances, was discussed in Section 5. The structure will be described and the advantages and disadvantages identified.

It will be assumed that the program is large enough to warrant a program manager and at least several assistants whom we shall call assistant program managers. Normally, each assistant PM would oversee a certain functional area or identifiable subarea of the overall program. If the program (and program office) is big enough, eash assistant PM may have a small staff assigned to him/her. However, the primary task accomplishment is still done by the functional departments.

The keys to the suggested structure for implementing PDM are as follows:

1) Each assistant PM has the responsibility and authority for his/her particular portion of the program.

2) Each assistant PM is accountable not only for the success or failure of his/her portion of the program, but also for all work done on that portion of the project. This includes the work done by the functional personnel on that portion of the program.

More detail on this second point may be found in Jonason's article (16) wherein a Swedish company noted that most project managers in U.S. companies served as coordinators of the organizational forces necessary to complete project goals.

In this role, they were accountable for the projects ultimate success or failure, but not always accountable for the performance of the people assigned to the project tasks. This often led to frequent incidents of open hostility between project managers and functional department heads, usually over competition for the time and talent of department personnel. The Swedish Company (LKAB) tries to avoid this situation by making the project manager accountable for all work done on that project. The heads of the functional departments have no accountability for work done, but they do support the performance of their people on project assignments. In other words, the PM has work accountability and the functional department head has final people accountability.

Getting back to the proposed structure for PDM, the assistant PM would have accountability for the work of the functional workers, even though they might not be co-located and even though administratively they would still be under the functional management. The assistant PM would conduct or at least participate in the performance reviews of the functional workers. The assistant PM would also administer the funds for his portion of the project.

PDM is facilitated in several ways by this structure. First of all, there can be a PDM "loop" which includes the program manager and his assistants. When participative decision making is called for and appropriate at this level, these are the participants. Of course, information is flowing from and to each assistant PM's area of responsibility. Other PDM "loops" are formed by each assistant PM and his/her staff and functional workers. When PDM is appropriate at this level, these are the participants. In this case, information is also flowing between the various assistant PM "loops" and also to and from the program manager.

Some of the advantages of the proposed structure, besides facilitating PDM, are (no particular order):

1) More authority, job satisfaction and motivation for the assistant program managers.

2) Better inputs to functional employee performance reports.

3) Better coordination between functional workers working on one portion of the program.

4) Better information flow to PM.

5) Improved training for future PM's.

6) Improved training for functional workers interested in PM type work.

7) More job satisfaccion and affiliation with program for functional workers.

8) Potentially better customer interfaces.

9) Fewer layers of authority to top management.

Some of the disadvantages of the proposed structure are (no particular order):

1) Requires backing and openness of PM.

2) Lack of talented assistant PM's - especially those familiar with PDM and interpersonal strategy.

3) Functional management feel that their authority being taken away.

4) Functional workers reluctant to dedicate themselves to a program - feel they may be out of a job when program complete.

Some of these disadvantages can be overcome with proper training and upper management support.

To summarize, one implementation plan for participative decision making in a matrix organization has been suggested. There may be better plans but at least this one appears to have some significant advantages. It should be

remembered that whatever the organizational structure, PDM should not be blindly employed. The factors discussed in the preceeding section of this paper should be considered.

Section 7.

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